

A is an anhydride group —OCOCO— (attached to vicinal ring carbon atoms); the number of A groups per molecule is 0 to 1, preferably 0 or 1;

X is a halide (F, Cl, Br, or I) group; and the number of X groups per molecule is 0 to 8, preferably 0; and y is 0 to 1, preferably 0.

It should be understood that the foregoing disclosure emphasizes certain specific embodiments of the invention and that all modifications or alternatives equivalent thereto are within the spirit or scope of the invention as set forth in the appended claims.

What is claimed is:

1. A method for preparing the surface of dentin or enamel for adhesion of composite materials or resins, which method comprises:

- (a) contacting with the surface of the dentin or enamel an aqueous solution comprising at least one acidic salt containing a polyvalent cation which is capable of changing valence by unit steps and which can bind to dentin or enamel surface sites, and at least one anion which forms a relatively water-insoluble precipitate or precipitates with calcium and which contains at least one carboxyl group;
- (b) contacting with the surface of the dentin or enamel a solution comprising at least one compound selected from the group consisting of (1) the adduct of N(p-tolyl)glycine and glycidyl methacrylate, and (2) the addition reaction product of N-phenylglycine and glycidyl methacrylate; and
- (c) contacting with the surface of the dentin or enamel a solution comprising at least one compound selected from the group consisting of (1) the addition reaction product of pyromellitic acid dianhydride and 2-hydroxyethyl methacrylate, (2) the addition reaction product of 3,3',4,4'-benzophenonetetracarboxylic dianhydride and 2-hydroxyethyl methacrylate, and (3) 4-methacryloxyethyltrimellitic anhydride.

2. A method as in claim 1 wherein the concentration of the acidic salt solution is from about 0.1% to a saturated solution.

3. A method as in claim 1 wherein the cation of the acidic salt forms a relatively insoluble phosphate.

4. A method as in claim 1 wherein the acidic salt is ferric oxalate.

5. A method as in claim 1 wherein the acidic salt is ferric citrate.

6. A method as in claim 1 wherein the concentration of the solution comprising at least one compound selected from the group consisting of (1) the adduct of N(p-tolyl)glycine and glycidyl methacrylate, and (2) the addition reaction product of N-phenylglycine and glycidyl methacrylate is from about 0.1% to a saturated solution.

7. A method as in claim 1 wherein the compound selected from the group consisting of (1) the adduct of N(p-tolyl)glycine and glycidyl methacrylate, and (2) the addition reaction product of N-phenylglycine and glycidyl methacrylate is the adduct of N(p-tolyl)glycine and glycidyl methacrylate.

8. A method as in claim 1 wherein the concentration of the solution comprising at least one compound selected from the group consisting of (1) the addition reaction product of pyromellitic acid dianhydride and 2-hydroxyethyl methacrylate, (2) the addition reaction product of 3,3',4,4'-benzophenonetetracarboxylic dianhydride and 2-hydroxyethyl methacrylate, and (3) 4-methacryloxyethyltrimellitic anhydride is from about 0.1% to a saturated solution.

9. A method as in claim 1 wherein the compound selected from the group consisting of (1) the addition reaction product of pyromellitic acid dianhydride and 2-hydroxyethyl methacrylate, (2) the addition reaction product of 3,3',4,4'-benzophenonetetracarboxylic dianhydride and 2-hydroxyethyl methacrylate, and (3) 4-methacryloxyethyltrimellitic anhydride is the addition reaction product of pyromellitic acid dianhydride and 2-hydroxyethyl methacrylate or the addition reaction product of 3,3',4,4'-benzophenonetetracarboxylic dianhydride and 2-hydroxyethyl methacrylate.

10. A method as in claim 1 wherein the solvent for the solution of subpart (b) is acetone.

11. A method as in claim 1 wherein the solvent for the solution of subpart (c) is acetone.

12. A method as in claim 1 wherein the steps (a), (b) and (c) are performed in that order.

13. A composition comprising the addition reaction product of pyromellitic acid dianhydride and 2-hydroxyethyl methacrylate.

14. A compound selected from the group consisting of

